

HPV and Cervical Cancer Knowledge, Risk Perception, and Screening Engagement Among Women in Rural Siaya County, Kenya: A Cross-Sectional Analysis

SRT Kenya: Isabella Banan, Navya Kancharla, Divya Subramanian, Gayathri Vanka
Duke University Department of Global Health

Introduction

Cervical cancer is a leading, yet largely preventable, cause of death among women in Kenya.

- It is the leading cause of cancer mortality among women in Kenya, primarily caused by HPV
- The WHO calls for screening 70% of women by age 35 and again by 45 (as a part of a 90-70-90 strategy) by 2030.

Early screening is recommended for prevention, but screening rates remain low due to gaps in healthcare infrastructure.

- This low rate is characterized by misconceptions about screening, affordability of treatment, lack of medical training in cervical cancer screening, and patient concerns about privacy
- Community health promoter (CHP) support, laboratory technology, and training support are often hard to acquire

mSaada is a mobile app for HPV self-collection screening developed to help close this gap.

- The tool guides CHPs through HPV/cervical cancer education, screening administration, and electronic data capture.
- mSaada's effectiveness is currently being assessed in an ongoing cluster-randomized controlled trial with 12 sites in Siaya County being evaluated over 12 months.

Research Objective

This project sought to:

- Assesses HPV/cervical cancer knowledge, risk perception, and screening engagement among women enrolled in mSaada
- Characterize the gap between clinic attendance and screening uptake to inform mSaada's design and future screening models

Methodology

Design: Cross Sectional Survey
Nested in the randomized control trial

Women Surveyed (N=483)

Eligibility criteria: women eligible for cervical cancer screening (ages 25-64), able to provide informed consent, and who lived in one of twelve mSaada study sites (6 treatment sites, which use mSaada, and 6 control sites, which use traditional paper record systems)

Electronically administered REDCap survey included 3 instruments:

Eligibility Screening

HPV/Cervical Cancer Knowledge, Visit Context, and Screening Experience

Demographics

Baseline descriptive analysis using preliminary data to set up for subsequent analysis using inferential methods

Results

Fig 1. Assessment of HPV and cervical cancer knowledge

Composite Score	Number of Women	%
5	183	38.20%
4	126	26.30%
3	98	20.46%
2	48	10.02%
1	11	2.30%
0	17	3.55%

Composite scores measured number of correct responses out of 5. 61.80% of women got one or more question incorrect when tested on basic HPV and cervical cancer knowledge.

The questions that were most commonly answered incorrectly referred to family planning risk association with HPV and HPV diagnosis correlation with cancer.

Knowledge Question	Correct Response n	%
Q1 - HPV diagnosis and cancer correlation	333	69.52%
Q2 - bearing children with HPV	338	70.56%
Q3 - family planning risk association with HPV	327	68.27%
Q4 - HPV prevention methods	381	79.54%
Q5 - treatment availability for HPV	441	92.07%

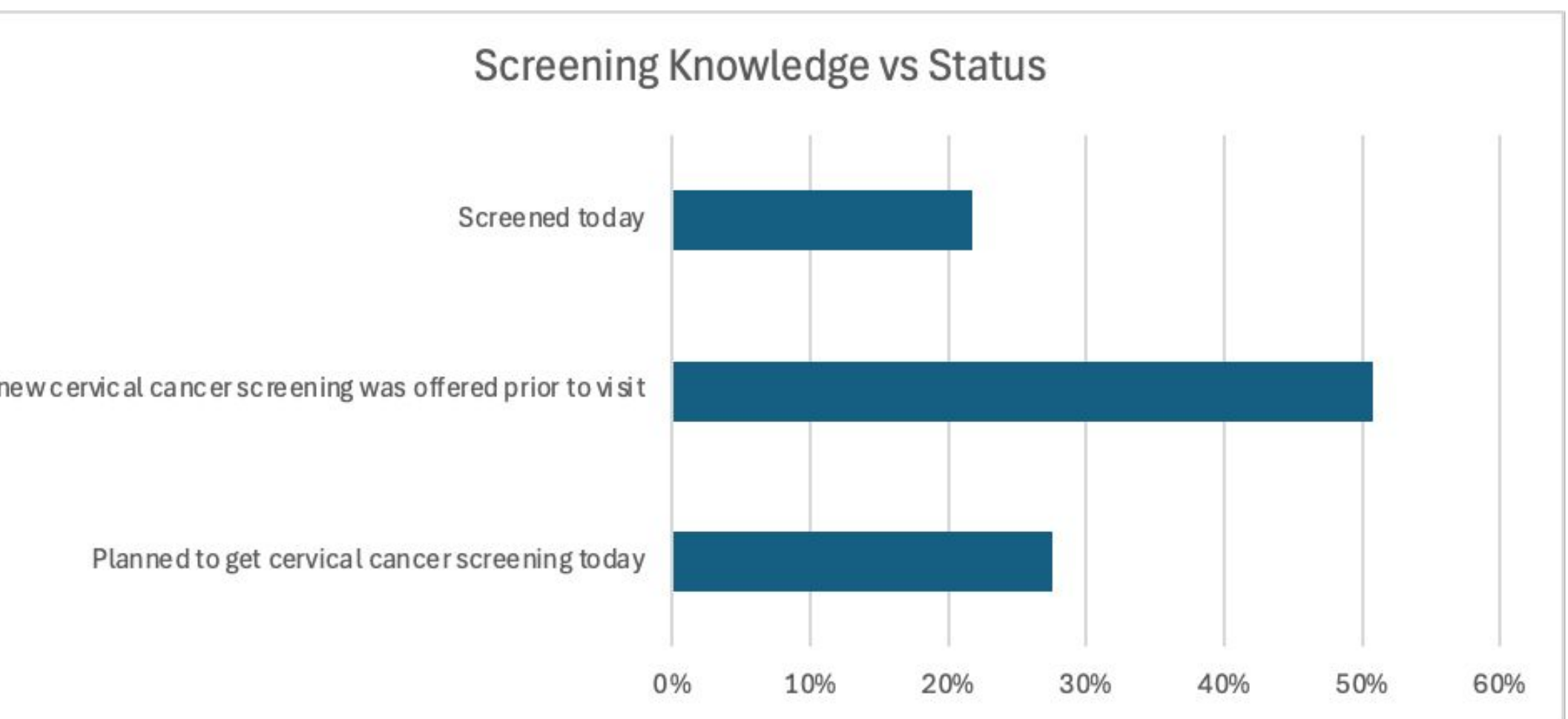
Fig 2. Risk perception and screening knowledge survey results

Statement	Strongly disagree	Disagree	Neither	Agree	Strongly Agree	Prefer not to answer
I am at risk for infection with HPV.	50	70	48	200	106	10
I am at risk for cervical cancer.	55	70	42	219	86	7
Screening for HPV would reduce my risk for developing cervical cancer.	32	26	18	219	180	3

While most women recognized the value of screening, fewer saw themselves as personally at risk.

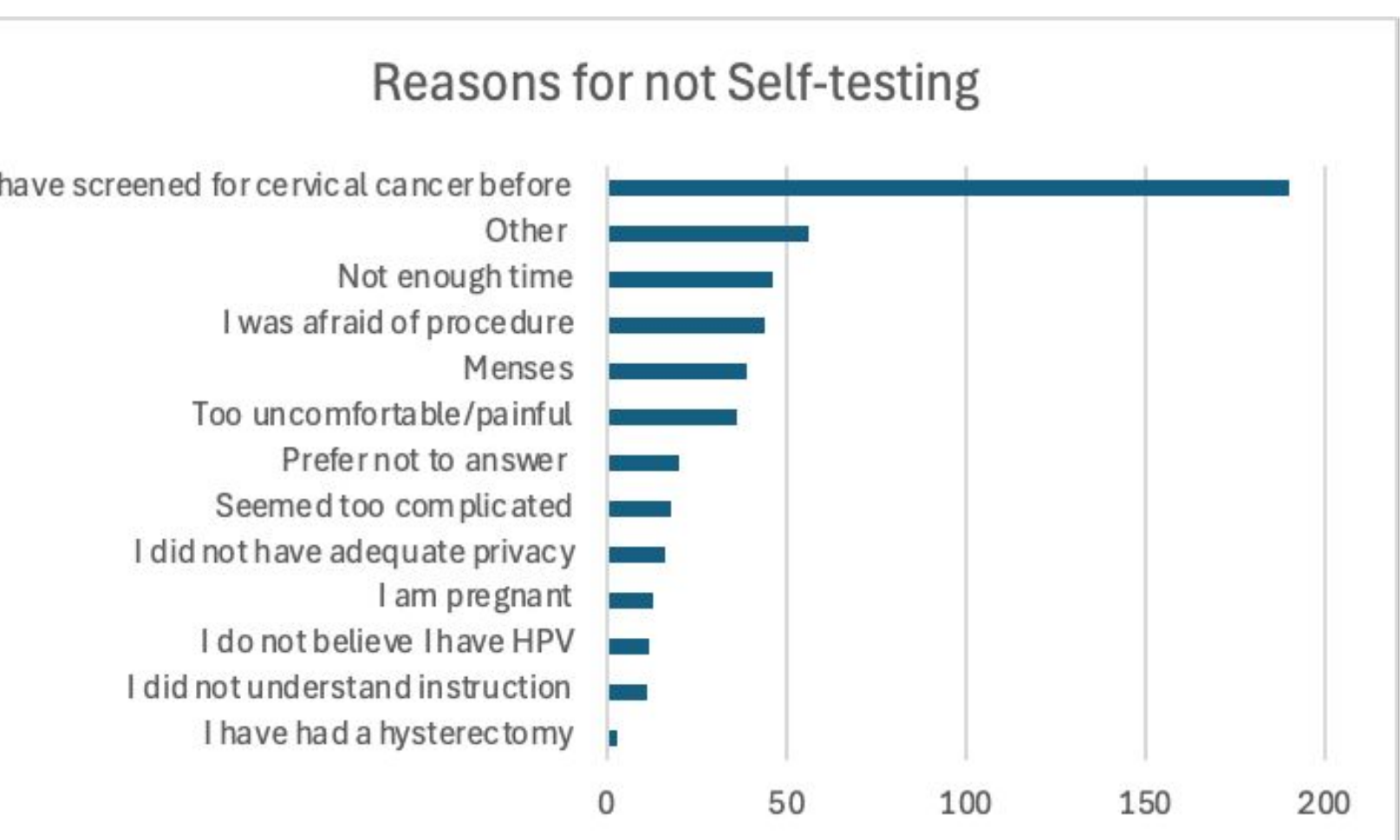
84% of women surveyed agreed or strongly agreed that screening for HPV would reduce risk for cervical cancer, but only 63% agreed that they were personally at risk for HPV or cervical cancer.

Fig 3. Screening knowledge vs. rescreen interval knowledge



Question	Correct Responses	%
Q1: Rescreen interval after negative HPV result (HIV negative women, n= 50)	22	44.0%
Q2: Rescreen interval after negative HPV result (HIV positive women, n= 58)	17	34.0%

Fig 4. Reasons for not self-testing among screening-eligible women



The primary reason for not self-testing was having screened in the past for cervical cancer. However many women incorrectly stated their rescreen interval (Fig 3.)

Discussion & Impact

- Despite strong risk perception, belief in screening protective value, and knowledge of screening availability, same-day screening completion rates remained low
- Low knowledge score results and significant gaps in recommended re-screening practices among women suggest persisting gaps in HPV and cervical cancer knowledge
- Improved CHP training by incorporating incentivization methods, strategies for approaching patients, and HPV/cervical cancer reeducation can help address knowledge gaps, increase screening uptake, and improve health outcomes among women in Siaya



Next Steps

- Conduct further qualitative comparative analysis to determine identify patterns and gaps in knowledge, attitudes, and screening uptakes
- Conduct stakeholder interviews with public health officials, digital health experts to discuss further mSaada design developments.
- Develop CHP training model improvements to address gaps in screening rates and knowledge levels.

Sources

. Mwenda, V., Mburu, W., Bor, J. P., Nyangasi, M., Arbyn, M., Weyers, S., Tummers, P., & Temmerman, M. (2022). Cervical cancer programme, Kenya, 2011-2020: lessons to guide elimination as a public health problem. *Ecancermedicalscience*, 16, 1442. <https://doi.org/10.3332/ecancer.2022.1442>
2. Adewumi, K., Nishimura, H., Oketch, S. Y., Adsul, P., & Huchko, M. (2022). Barriers and Facilitators to Cervical Cancer Screening in Western Kenya: a Qualitative Study. *Journal of cancer education : the official journal of the American Association for Cancer Education*, 37(4), 1122–1128. <https://doi.org/10.1007/s13187-020-01928-6>

Acknowledgements: We would like to thank Dr. Megan Huchko and the KEMRI team: Jennifer Mbaka, Breandan Makhulo, Florence Mawere, Evans Otieno, Belinda Malongo, Merceline, Dr. Odhiambo, along with the Siaya County community. We would also like to thank Lysa Mackeen, Emilee Kerr, previous Kenya SRT teams, and the DGH Student Research Training program.